TOWN OF CANDIA
OPEN SPACE PLAN

Prepared by the
Southern New Hampshire
Planning Commission

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I. INTRODUCTION

The Town of Candia is a member of the Southern New Hampshire Planning Commission (SNHPC), which consists of thirteen communities. Located in the south-central portion of New Hampshire, this 490-square-mile area, encompassing portions of Merrimack, Hillsborough and Rockingham counties, lies at the northern end of the megalopolis that stretches from southern New Hampshire to northern Virginia.

According to the U.S. Census, the SNHPC region has experienced a steady increase in population during the last several decades, growing from 121,066 in 1960 to 248,838 in the year 2000 (See Appendix B). Between 1990 and 2000, the region's total population increased by 14.95%, compared to a statewide rate of 11.4%. Today, the region is home to more than one-fifth of New Hampshire's population. By the year 2015, the region's total population could exceed more than two hundred ninety-two thousand persons.

Residential and commercial growth in the region continues to be spawned by the accessibility to major transportation routes; proximity to the Boston metropolitan area; the availability of infrastructure such as public water and sewer; the state's favorable tax structure; the availability of developable land; and other, less tangible, factors which comprise the region's unique "quality of life." It is likely that these factors will continue to have an effect on population growth.

The Town of Candia, similar to other member communities of the Southern New Hampshire Planning Commission, has experienced significant population growth. According to the U.S. Census, Candia's year 2000 population of 3,911 represents a growth of 9.95 percent since 1990. Between 1980 and 2000, Candia grew by 922 residents, an increase of more than 30%. Growth of this magnitude has already resulted in the loss of open space, and will continue to irreversibly alter the landscape and character of the community while threatening the natural resources upon which humans and other species rely. Therefore, community growth and the resultant loss of open space need to be managed and planned for appropriately in order to protect the features that many find attractive about Candia: rural character, clean water, abundant wildlife, close-knit communal town centers, and lower cost of living.

A. Regional Context

Candia is located in Rockingham County, southern New Hampshire. It is bordered on the north by Deerfield, on the east by Raymond, on the south by Auburn and Chester, and on the west by Hooksett. Candia is approximately 11 miles from Manchester, 22 miles from Concord, 29 miles from Nashua and 39 miles from Portsmouth. The major highways in Candia are NH Routes 101 and 27. NH Route 101, the major east-west highway in the state, provides access to the seacoast area and to Manchester. NH Route 27 (formerly NH Route 101B) provides connections to the towns of Raymond and Hooksett. Interstate 93, which provides direct access to Boston and northern New Hampshire, is accessible from the Town via NH Route 101.

Included within the Town are several public recreational facilities. Three facilities—the Moore Elementary School, the Candia Town Park, and the Candia Youth Athletic Association Park—offer activities such as picnicking, baseball, playground activities and field sports. A private golf

course is also located in Town. Bear Brook State Park in Allenstown is close by and offers swimming, picnicking, camping, and snowmobiling. Pawtuckaway State Park in Nottingham is only a 20-to-30-minute drive from Candia. The White Mountain area of New Hampshire is easily accessible from Candia via Interstate 93. The Atlantic Ocean is 40 minutes away along NH Route 101.

B. History of Candia

Early historians were not in agreement as to who might have been the first settlers in Candia. Nevertheless, on the petition of 38 residents to Provincial Governor Benning Wentworth and his council, the North Parish of Chester was set apart in the name of Candia on December 17, 1763.

Originally settled as an agricultural community, the local economy gradually gave way to a variety of manufacturing enterprises, which were first established on a small scale to meet local needs, but later expanded to serve the demands of distant markets. Prominent early activity centers included Candia Village (where the North Branch River crosses what is now NH Route 43); the Langford District (East Candia); the Corner (now known locally as the "Four Corners"), and Candia Depot on Main Street.

Soon after the Town was first settled, coopering became an important industry to meet the great local demand for barrels from both farms and homes. It was not long before the product was being exported by wagon to Portsmouth, New Hampshire and Salem and Newburyport, Massachusetts, where there were constant demands for fish barrels. Similarly, small home-based shoe-making operations that catered to the local populace were transformed into relatively large-scale mechanized shoe manufacturing plants located in Candia Village, the Corner, Depot Village and the Langford District, supplying products for large wholesalers in Massachusetts.

With the coming of the Concord and Portsmouth Railroad in 1852 and the Candia Branch Railroad from Manchester in 1860, lumber, ship timbers, building frames and other forest products were transported by rail to Portsmouth, Manchester and elsewhere.

The first post office was established in Candia in 1818. Its location was frequently changed, depending upon who happened to be the postmaster and where his store or home was situated. There were no home deliveries. Newspapers often published the names of people in the community who had mail at the post office so they could pick it up. Communications with the "outside" further improved in 1882 when the New England Telephone Company established a telephone line between W.J. Dudley's store in Candia Village and the City of Manchester.

Between 1880 and 1890, Candia's population began to decline as the great factories of Manchester, Nashua and Lowell flourished, luring the younger residents of both sexes away from town to the cities where they could not only make more money, but enjoy the cultural benefits of city life as well.

Throughout the first half of the twentieth century, Candia retained its rural character and appearance, although the agricultural and lumber businesses had begun to decline. In more recent years, regional growth pressures facing all of southern New Hampshire have brought major

changes, which have put a tremendous strain on Candia's natural and cultural resource base. Suburbanization is now a severe threat to the Town's historic characteristics, landscape and scenic values. In order to preserve the historic attributes that reflect Candia's evolution, steps must be taken to ensure that new growth will be sensitive to the Town's cultural as well as natural environments.

C. Statement of Purpose

Open space planning is a critical issue in Candia. Because of the wide array of natural resources, opportunities for recreation, low cost of living, lack of crime and rural community character, Candia is an attractive place to live and continues to grow rapidly. As a result, the Town is growing at a pace that is unprecedented. Such overwhelming growth pressure results in loss of open space that denigrates the environment and the Town's rural community character. It can also create an economically difficult situation for a community that is trying to keep pace with the demand for services. For example, according to *New Hampshire's Changing Landscape*, prepared by Dan Sundquist, Society for the Protection of New Hampshire Forests, and Michael Stevens, New Hampshire Chapter of the Nature Conservancy, residential growth generally costs communities an average of $1.09 for every $1.00 of tax revenue generated.

Recognizing this, the Southern New Hampshire Planning Commission worked with the Town of Candia Planning Board and Conservation Commission to develop this Open Space Plan. The project was conducted under the Scope of Services requirements of the Regional Environmental Planning Program (REPP) and was funded by the State of New Hampshire's Department of Environmental Services (DES). This Open Space Plan identifies existing open space and agricultural lands. Unfragmented forest areas are identified and their connectivity to a regional system is analyzed. The Plan contains Geographic Information System (GIS) map layers that include water resources, wetlands, valuable agricultural soils, forested areas, known wildlife habitats, recreational opportunities and resources, and historic sites. Together, these maps comprise an inventory of the Town's open space resources. The Town of Candia's Goal and Objectives (derived from analysis and the public process), along with recommendations on how to achieve those objectives, are listed in the final chapter of this Open Space Plan.

II. NATURAL AND CULTURAL RESOURCES

The natural characteristics of the land influence, and often dictate, its use. Soil type, slope conditions, topography, and the availability of water resources may either encourage or limit development in a particular area. Thus, a town's natural resource base provides a framework within which land use decisions are reached and implemented. An inventory of Candia's natural and cultural features and resources, and an analysis of their characteristics and capabilities in terms of development potential, can provide a "blueprint" from which it is possible to identify constraints to and opportunities for future development, as well as prospective sites for open space conservation and preservation.

Candia still has a significant amount of undeveloped land. The Town has the opportunity to link land use decisions to a consideration of the types of development opportunities and limits that the natural features of the land impose. This is particularly true since many of the land's natural features shape both Candia's character and quality of life.

The following section is a narrative discussion that presents the characteristics of Candia's natural and cultural resources, describes the general locations of open space, and examines the development capabilities as well as preservation possibilities of particular land features through a series of nine maps (See Appendix A, "Community Maps") that were drafted for the Town as a part of this project. The pattern of these areas, particularly where several resource characteristics overlap (multiple values), is critical to the Candia Open Space Plan. Areas having a concentration of open space values represent resource lands that should remain in their natural condition to preserve water quality, wildlife habitat, recreation opportunities, sustainable timber resources, historic settings and visual quality in the Town. In summary, protecting these resource areas from land use change contributes in a positive manner to the quality of life in Candia.

A. Existing Conditions

1. Location of Basic Features

Map 1 indicates the location of basic features within the Town of Candia by providing a general overview of important structures such as roads, trails, transmission lines and railroad lines, as well as natural features such as water bodies, hills and mountains.

There are several hills and one mountain in Candia that range in size from approximately 600 feet to more than 900 feet. The hills include Patten Hill in the southeastern corner; Tower Hill in the southwestern corner; Walnut Hill in the north-central part of Town; and an unnamed hill in the center of Town, known to some local residents as "Diamond Hill." Hall Mountain, which is located within Bear Brook State Park, is in the northwestern corner of Candia. Although there are several hills throughout Candia, comparatively few areas have been identified as having a 25 percent slope or higher, (a vertical rise of 25 feet over a horizontal run of 100 feet), which is considered to be a "steep slope." Steep slopes are identified on the "General Areas of Potential Development Constraints" map (Map 4). High points of land are often valuable for their scenic views. The two most significant high points within Candia are Hall

Mountain and Tower Hill. Except for its southerly face, Hall Mountain is located in Bear Brook State Park and is not likely to be developed. The westerly face of Tower Hill, the section with the steep slopes, is owned by Manchester Water Works and is also not likely to be developed.

2. Sand and Gravel Deposits

Layers indicating the location of probable sources of sand and gravel in the Town of Candia can be seen on Map 2 ("Sand & Gravel Deposits"). In 1989, the New Hampshire General Court revised RSA 674:2 "Master Plan Purpose and Description," to require that each municipal Master Plan "…summarize known sources of construction materials which are available for future construction material needs...." As such, the location of sand and gravel deposits is an important component of the Candia Open Space Plan that should be incorporated into the Master Plan for the Town. In order to be able to accommodate future needs for materials such as sand and gravel, selected locations of some of the most probable sources have been identified on Map 2.

The terms "sand" and "gravel" as used herein are defined by the Natural Resource Conservation Service (NRCS) as natural aggregates considered to be suitable for commercial use with a minimum of processing. The properties used by the NRCS to evaluate the soil as a probable source of sand or gravel are gradation of grain sizes, the thickness of the deposit, and the content of rock fragments. A soil rated as a "probable" source has a layer of clean sand or gravel or a layer of sand or gravel that is up to 12 percent silty fines. The material must be at least 3 feet thick and less than 50 percent, by weight, large stones. Each soil is evaluated to a depth of 5 or 6 feet. Soils not meeting these standards are rated as "improbable" sources. Coarse fragments of soft bedrock, such as shale and siltstone, are not considered to be sand or gravel. In many instances, these sand and gravel deposits occur with naturally significant features such as floodplains, aquifers, NWI wetlands, and hydric soils as well as bodies of water (see Maps 4, 5, and 8).

The NRCS has identified approximately 490 acres as probable sources of sand and gravel in the Town of Candia. Only about 17 acres of this land is considered to be strictly sand. There have been no sites identified by the NRCS as strictly gravel. The areas in Candia where the soils are classified as probable sources of sand and gravel are very few in number. The most significant concentration of a probable source of sand and gravel is found in the north-central part of the community, just south of the Deerfield line. Smaller sites are located in the northeastern part of Town, just to the east of Deerfield Road (NH Route 43), and off of the northerly and southerly sides of Raymond Road (NH Route 27) at the Raymond line. Relatively small sources of sand and gravel are also located south of NH Route 101 to the west of Brown Road and between Brown Road and Palmer Road. Other concentrations of sand and gravel deposits can be found in the southwestern corner of the Town just under the Chester Turnpike, and to the west of Tower Hill Road.

3. Overall Development Potential Rating

The "Overall Development Potential Rating" (Map 3) is based on the soils layer and displays existing soil conditions in the Town of Candia. This map indicates the locations of potential

development sites in the Town of Candia based on the soils potential development rating derived from the "Soil Potential Ratings for Development." Areas that have a lower development potential and should remain as open space, if possible, are identified. Existing water bodies in the Town are also displayed.

a. Soils

Soil is the surface layer of the earth, generally extending to a depth of two to four feet, created by the interaction of geology, climate, plants, animals, topography and time. In Candia, there are 13 soil series (soil with characteristic layers of composition, thickness and arrangement) and 4 complexes (two or more soils which are too intermingled to map separately). The "Soil Survey" Map, prepared by the U.S. Department of Agriculture, Soil Conservation Service (SCS), now known as the Natural Resource and Conservation Service (NRCS), and published in 1994, differentiates even further by noting characteristics of slope and stoniness. Soils are identified by factors of structure, texture, compaction, moisture content, pH, permeability, erosion potential, fertility and other characteristics. Such descriptions enable soils scientists, engineers, and planners to evaluate this variable "surface layer" for its usefulness for a range of human activities.

In 1987, the Rockingham County Conservation District, working in conjunction with a committee of key municipal, regional, and state officials, developed soil potential ratings, which indicate the relative quality of a soil for development when compared with other soils in Rockingham County. The overall development potential of the soil is based on ratings for each of three uses—the suitability of the soil to accommodate septic tank absorption fields, dwellings with basements, and local roads and streets. For each of these three uses, a reference soil is defined as follows:

The REFERENCE SOIL for the septic tank absorption field system is on a gently sloping area of five percent slope. The depth to high water table and to bedrock is below ten feet. The area is not subject to flooding. There are less than three percent surface stones and boulders, and the soil has a percolation rate of 12 to 15 minutes per inch.

The REFERENCE SOIL for a dwelling with a basement is a well-drained soil (water table below six feet) that is not subject to flooding. The depth to bedrock is greater than six feet and there is less than three percent surface stones and boulders. Slopes are less than eight percent.

The REFERENCE SOIL for local road or street is on a two percent slope. Depth to bedrock and to the water table are greater than six feet. The surface layer has less than three percent surface stones and boulders. The area does not flood.

A reference soil is merely a soil with soil properties that have the most favorable characteristics for that particular use. Based on the ratings for each of the three uses, a composite rating for development was determined by a weighted average—septics 40 percent, dwellings 30 percent, and roads 30 percent.

All of the soils in Rockingham County were evaluated relative to the reference soil, arrayed in descending order of relative quality, and divided into five soil potential classes ranging from "very high" to "very low."

Factors for determining soil potential ratings for development were:

- Depth to water table
- Flooding
- Slope
- Depth to bedrock
- Stone cover (surface)
- Permeability (septic tank absorption field)

The soil potential ratings are described as follows:

VERY HIGH POTENTIAL: Site conditions and soil properties are favorable. Installation or management costs are low and there are few or no soil limitations. Soils in this group have soil properties similar to the REFERENCE SOIL.

HIGH POTENTIAL: Site conditions and soil properties are not as favorable as the REFERENCE SOIL. The costs of measures for overcoming soil limitations are slightly higher for these soils than for soils with a very high potential.

MEDIUM POTENTIAL: Site conditions and soil properties are below the REFERENCE SOIL. The costs of measures for overcoming soil limitations are significant.

LOW POTENTIAL: Site conditions and soil properties are significantly below the REFERENCE SOIL. The costs for overcoming soil limitations are very high.

VERY LOW POTENTIAL: There are severe soil limitations. The costs of measures to overcome the limitations are extremely high or prohibitive.

Map 3, which is based on the potential of the soil for development, has classes which range from "very high" to "very low." Factors for determining soil potential ratings for development were: depth to water table, flooding, slope, depth to bedrock, stone cover (surface) and permeability (septic tank absorption field).

Soil potential rating information was used by the Southern New Hampshire Planning Commission (SNHPC) to help prepare the "Overall Development Potential Rating" map (Map 3). "Soil Potential Ratings for Development" are shown, indicating how Candia's soils rate in the range from having a "very high" development potential to having a "very low" development potential, all on the basis of the composite rating system established in the Rockingham County Conservation District report "Soils Potentials for Development, Rockingham County" (May 1987). On the basis of Map 3, it is estimated that approximately 860 acres are rated as having a "very high" potential; approximately 2,450 acres are rated as having a "high" potential; approximately 6,760 acres are rated as having a "medium" potential; approximately 3,530 acres are rated as having a "low" potential; and approximately 5,560 acres are rated as having a "very low" potential for adequately accommodating development. These estimates do not include surface waters.

With regard to the preparation of Map 3, the hydric soils (those that are very poorly drained and poorly drained) are included in the "very low" potential category. The prime farmlands and the additional farmlands of statewide importance are included in nearly all of the soil potential ratings categories; however, most of these soils are included in the "high" potential category.

More detailed information about the methodology and ratings employed by the Rockingham County Conservation District is presented in "Soil Potentials for Development, Rockingham County" (May 1987). This report should be of value to landowners, since it describes the particular restrictive features of a soil, presents recommended corrective measures, identifies long-term problems, and gives some idea of the relative costs, in 1986 dollars, of "working" some soils versus others. It also provides valuable guidance for planning boards as a signal that, for certain soils, additional drainage and erosion control measures may be needed, or that impact studies should be requested for certain proposed developments.

b. Prime Farmland and Farmland of Statewide Importance

The Natural Resource and Conservation Service (NRCS) has identified three soil series in Candia which are agricultural lands considered to be of prime or statewide importance—Montauk (B and C slopes), Scituate-Newfields Complex (A and B slopes), and Canton (B and C slopes). Based on these soil classifications, it is estimated that Candia has approximately 410 acres of prime farmland and 157 acres of farmland of statewide importance. Farmland of statewide importance contains soils identified as being important to agriculture in the state and are capable of producing fair-to-good crop yields when managed properly (see Map 3).

Farmlands may include pastures, sheep and horse farms, and "pick your own" operations as well as dairy farms. It should be noted that not all of the agricultural land designated by the NRCS as being of prime or statewide importance is necessarily in current agricultural use. Some of the land may exist as vacant parcels or have been developed as house lots. The reason that agricultural lands are often developed as non-agricultural uses is that the topographic and soil characteristics that make prime farmlands most favorable for agricultural activities also make them favored sites for development. Thus, the protection of agricultural land represents a substantial challenge—a balance must be achieved between the rights of landowners, the need for development, and the preference among many residents for a rural lifestyle. Please refer to the open space recommendations section for agricultural land protection techniques which could be employed at the local level.

Prime farm soils are those soils that have the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops economically when treated and managed, including water management, according to modern farming methods. Normally floodplains contain the most productive soils in a community. However, since floodplains are limited in area and closely associated with hydric soils adjacent to wetlands, ponds and stream areas, productive agricultural lands in Candia are located near the older farmsteads where field and crop management have been practiced for many years. When overlaid with the generalized land use layer, it appears that, for the most part, both prime farm soils and farmland of statewide importance have managed to remain undeveloped in the Town of Candia because a portion of these soils has been preserved as part of the Candia Woods Golf Links and as actual farm sites

throughout the Town. Existing productive agricultural lands are limited in Candia and should be protected because of their special value and rarity.

4. General Areas of Potential Development Constraints

Areas where development should not occur in the Town of Candia, if at all possible, are identified on Map 4. Areas which can be classified as development constraints include sites with features presenting natural constraints to development and, as such, require extensive planning, engineering and special construction techniques before they can be safely built upon. Steep slopes, floodplains, wetlands, hydric soils, aquifers, and water bodies are displayed on this map.

a. Steep Slopes

Much of Candia is gently rolling land forming gradual ridges and lower wetland valleys. Limited areas having steep slopes (greater than 15%; identified on Map 4), are generally located in association with the hilly topography in the southeastern and western corners (Patten Hill, Tower Hill) of the Town and in the northwestern corner (Hall Mountain). Other steep slope areas are in central and east-central locations. The steeper topography provides a visual background to views of the farm and village landscapes. If cleared of vegetation, the steep slopes would be prone to erosion, would cause more rapid and deeper flooding of the runoff streams and would reduce the appeal of views throughout the community. Thus, the slope of the land has important implications for future land use choices. If development of steep slope areas is carried out without designing and installing adequate waste disposal systems and implementing erosion control measures, as is usually the case, problems will likely result. Alternatively, areas with slopes in excess of 25 percent, also potential problem areas, should be carefully monitored in order to prevent uses which would result in negative environmental impacts. Steep slopes should be protected from development and should be managed for wildlife habitat and sustainable timber production.

The flood hazard areas shown on Map 4 are based on the U.S. Department of Housing and Urban Development (HUD) maps which incorporate topographic, hydrologic, hydraulic and climate data as well as the effects of structures (roads and bridges) on water flow, and historical flooding rather than soils information alone.

The "Overall Development Potential Rating" map (Map 3) should be used in conjunction with the "General Areas of Potential Development Constraints" map (Map 4). Map 4 delineates "Areas that Should Not Be Developed" (special flood hazard areas, wetlands, and steep slope areas); and "Potential Development Areas" which are subject to the soil potential ratings. Map 3 distinguishes between the five soil potential ratings.

Those areas shown on Map 3 as having "low" and "very low" ratings for development potential generally include the "Areas That Should Not Be Developed" which are shown on the "General Areas of Potential Development Constraints" map; there is not, however, perfect overlap of those areas. The reason for this is that the data used for each of these maps is based on somewhat different criteria. In the case of the "Overall Development Potential Rating" map, six factors—depth to water table, flooding, slope, depth to bedrock, stone cover, and permeability—were considered in establishing the "very low" to "very high" soil potential ratings for three specific

uses, i.e., septic tank absorption fields, dwellings with basements, and local streets and roads. However, the "General Areas of Potential Development Constraints" map specifically considers the steep slopes (those in excess of 15 percent); hydric soils, defined as the very poorly drained and the poorly drained soils; FEMA floodplain areas; NWI wetlands and regions that contain aquifers.

The differences between Map 3 and Map 4 can be understood more clearly by examining, for example, the special flood hazard areas. Soil survey data can be used to identify the presence of alluvial soils which point to those areas of a community that have, over long periods of time, been the sites of frequent or regular flooding. On the basis of soils information alone, these areas are shown on the "Overall Development Potential Rating" map as having "low" and "very low" development potential. The special flood hazard areas shown on the "General Areas of Potential Development Constraints" map, however, are based on the HUD maps, which incorporate more extensive information as described above. Thus, the special flood hazard areas shown on this map are more encompassing, since many areas that do not exhibit the typical characteristics of alluvial soils flood with predictable frequency.

5. Hydrological Features

Sites that protect surface and sub-surface water resources are an important aspect of any Open Space Plan. It is important to protect the water's edge for public access as well as protecting water quality. Map 5 displays layers containing the locations of water bodies, floodplains, hydric soils, wetlands, aquifers and watershed boundaries.

a. Watershed Boundary

Candia is part of two large drainage basins, the Piscataqua (Lamprey) River basin and the Merrimack River basin. The dividing line between these basins runs diagonally from the northwestern corner of the Town to the southeastern corner (see Map 5). The Piscataqua (Lamprey) River basin directs surface water toward the coast of New Hampshire. The Merrimack River basin directs surface water inland.

Except for Hall Mountain, all of the area north of the dividing line between the Piscataqua (Lamprey) River basin and the Merrimack River basin drains to the Lamprey River, largely via the section of the North Branch River that runs through Candia. All of the area south of the dividing line, and the southerly part of Hall Mountain, drains to the Merrimack River largely via Tower Hill Pond, which drains into Lake Massabesic.

Due to the number of hills within Candia, several smaller watersheds are scattered throughout the Town (see Map 5). The Lower Suncook watershed can be found in the northwestern corner of the Town, the Lamprey River watershed is in the northeastern and north-central portions of the Town, the Cohas Brook watershed is in the southwestern and south-central region of the Town, and the Exeter River watershed is in the southeastern corner of the Town.

b. Flood Plains

"Frequency" and "chance of occurrence" are the two terms by which floods are described. For example, a "100 year flood" is a flood that has a 1-in-100 chance of occurring in a given year.

Most state, federal and local agencies use the 100 year flood as the base flood for regulatory purposes. In 1975, the U.S. Department of Housing and Urban Development, Federal Insurance Administration, issued special flood hazard area maps of Candia, showing the locations of the 100-year-flood areas. Such areas have been identified throughout the Town in proximity to brooks, rivers and wetlands. The largest of the special flood hazard areas have been identified adjacent to the North Branch River and Moose Meadow Brook, and surrounding Kinnicum Pond and Tower Hill Pond.

Rather narrow floodplains are associated with the lowland streams, ponds and wetlands in Candia's major watersheds—the Lamprey River basin (North Branch River) and the Lower Merrimack River basin (tributaries running into Tower Pond). The valley floodplains generally are located north and south of NH Route 27 in an east-west alignment. The floodplains should remain in their natural condition to accommodate runoff water during snowmelt and rainstorm periods and to provide wildlife habitat.

Candia's floodplain lands also contain a number of historic mill and dam sites. These lowland areas can become important greenway corridors for recreation trails linking historic sites, natural areas and recreation features in the community. Flood insurance regulations, which are administered by the Town as a requirement for flood insurance availability, mandate that the central channel of the floodplain, called the floodway, be kept development free to allow the flow of flood waters without damage to man-made structures.

c. Wetlands

Wetlands are usually found in close proximity to rivers, streams, and ponds or in isolated upland depressions. As development sites, wetlands have no advantage and significant economic costs. Their disturbance quite often disrupts the other valuable roles they serve. Instead, wetlands should be designated for use by compatible activities such as those that do not require the construction of buildings or structures, or those that will not necessitate alteration of the natural surface configuration by the addition of fill or by dredging.

Wetlands are an extremely valuable resource. Wetlands act as flood control areas where water is stored during periods of high runoff, helping to reduce flooding peaks; settling basins, for sediment generated by erosion; pollution filters (wetland vegetation utilizes some pollutants as nutrients); water supplies, by recharging groundwater and streams; wildlife habitats, providing food, cover, and nesting and breeding sites; and educational and recreational resources.

National Wetlands Inventory (NWI) wetland areas have been identified on this map. Ideally, wetlands and floodplains should remain in their natural state for many reasons, including water resources protection, habitat preservation and flood damage reduction. The New Hampshire Wetlands Bureau administers regulations that require permits for wetland alterations, which may discourage development. The Federal Emergency Management Agency (FEMA) requires local regulations that respect the flooding cycles of all water bodies. It is in the Town's interest to consider these factors when Candia is planning future development and open space preservation areas.

Wetlands and hydric soils are found in valley areas throughout the Town of Candia. Map 5 indicates a large concentration of wetland area in the western portion of the Town in association with Maple Falls Brook, Moose Meadow Brook and the southern tributary of the North Branch River. In the eastern portion of Candia, wetlands are associated with the Murray Hill Brook drainage. The streams carrying runoff from Patton Hill, Walnut Hill, Tower Hill and Hall Mountain frequently border wetland environments. Many small wetland areas are distributed throughout the Town.

d. Aquifers

It is important to protect groundwater within existing or potential public drinking water supply aquifers. Aquifers, like wetlands, serve as a place of storage for water. An aquifer can consist of surficial geologic deposits such as sand and gravel, or it can be fractured bedrock, but it must be able to store and allow the movement of water.

Although most of the aquifers in Town are classified as glacial till with modest underground water reserves, several areas are mapped as sand and gravel aquifers, which contain larger quantities of water. The lowland associated with North Branch River in the northeastern section of Candia, and the lands associated with Mill Brook in the southern section of the Town, harbor the largest reserves of water. Till has the lowest carrying capacity of any type of aquifer, although it is able to carry enough water to support single-family domestic development. Because the vast majority of Candia is on a till aquifer, the only areas of the Town considered to have medium-to-high groundwater availability are the small sand and gravel aquifers**.** These aquifer areas and their immediate contributing watersheds are important water resources worthy of protection.

Development of land that overlies aquifers can have negative, often irreversible, impacts. Faulty septic systems or leaking underground storage tanks can contaminate groundwater. Activities such as sand and gravel excavation remove the overburden, which can filter out many potential pollutants. Because of the role of aquifers in contributing abundant clean water, as well as their interconnections with wetlands and rivers, land planning in and around these sites should favor low-impact, low-intensity uses.

6. Generalized Land Use and Protected Lands

The land use layer in Map 6 represents a generalized view of land use in Candia. This map contains layers identifying generalized land use, protected lands, soils of statewide importance, prime farm soils, NWI wetlands, historic sites and the location of water bodies. According to this map, single-family detached residential use predominates the developmental character of the Town of Candia. Candia's residential development is widely dispersed throughout the community, with most of it fronting upon pre-existing roads. Commercial activities, other than those classified as home occupations, are mainly located along Old Candia Road and Raymond Road (NH Route 27), generally between the area of NH Route 101, exit 3, and the Raymond town line. A small concentration of commercial activity has also been identified in the vicinity of the Candia Four Corners. Only a few sites have been identified for industrial use in the Town of Candia. This activity is mainly limited to sand and gravel excavation and auto body repair uses. These sites are widely scattered throughout the community.

From an overall perspective, growth in Candia appears to be concentrated in the five villages and along Old Candia Road near the NH Route 101 exit intersection. It is anticipated that future development will continue in these areas, and it would be conducive to the Town's goal of open space planning to encourage such growth. Candia can preserve its rural character and high visual quality by discouraging strip development and focusing new building in, and adjacent to, village centers and in the "commercial" development area in the south-central section of the Town. If the community favors this development pattern, Candia's Master Plan update for land use should show dense building districts in the areas mentioned above. The long-range growth plan for Candia would depict higher density growth areas (the five villages and the Old Candia Road section located in south-central Candia) surrounded by open space lands that could accommodate timber management, agriculture, low-density residential uses and protected lands.

In terms of public land, there are four sub-categories:

- The first consists of those lands that are devoted to the provision of various governmental services. Among these are parcels on which are located such facilities as the Town Office Building, the Moore School, the Candia Fire Station, the Recycling Center, Town cemeteries, the Smyth Public Library, etc.

- Lands in the second sub-category include those publicly owned (by the state and/or local government) which are used for public recreation, resource and wildlife conservation, and/or watershed protection. The largest landowner in this sub-category is the Manchester Water Works.

- The third sub-category involves scattered parcels of various sizes, shapes and locations. These parcels are owned by either the Town of Candia or the State of New Hampshire.

- The fourth sub-category includes acreage that is devoted to street and highway rights-of-way.

a. Protected Lands

Protected land is land that is restricted from development through conservation easements, restrictions or outright ownership by an organization or agency whose mission includes preserving land in perpetuity. The protected land identified on Map 6 consists of parcels of land of two or more acres that are mostly undeveloped and protected from future development. Unique or adjoining smaller parcels, as well as other selected state-owned parcels, may also be included. Protected land can be made up of a variety of publicly and privately owned properties in a community. Mapping protected lands is useful for identifying where these lands can be expanded and linked to existing wildlife corridors and where buffers can be added to sensitive areas.

There appears to be an abundance of undeveloped land in the Town of Candia. The Town has an unusual opportunity to work towards the preservation of this very special open space resource. If the Town places a high priority on maintaining its existing open landscape, many techniques and initiatives can be considered for achieving this goal. The alternative means for land protection are described later in this Open Space Plan. Parcels of land for which the Town of Candia is the

primary protecting agency include the Candia Town Forest, the Kinnicum Pond area and the New Boston Road parcels (see Map 6).

b. Historical Sites

Lands and sites of cultural and historical importance need to be protected in the Town of Candia and should be included in an Open Space Plan. The history of a town provides a link between today's culture and the historical uses of the land. The National Register of Historic Places (NRHP) categorizes sites deemed to be of historical significance in the region.

Historic Sites included in the NRHP in the Town of Candia are:

- Sam Walter Foss Homestead
- First Baptist Church
- Village Cemetery
- Marker
- Island Cemetery
- Candia Historical Society
- St. Paul's Catholic Church
- Moore Park
- Fitts Museum
- Soldiers Monument
- Smyth Public Library
- Congregational Church
- Hill Cemetery
- Holbrook Cemetery
- East Candia Cemetery
- MacDonald's Mill Site

7. Habitat Features

In order to avoid fragmentation and isolation of plant and animal populations, as well as to maintain continuity of natural landscapes, it is necessary to provide wildlife corridors for plant and animal species. It is also essential to protect critical or threatened habitats, with an emphasis on those areas identified in New Hampshire's Natural Heritage Inventory (NHI). Map 7 displays contiguous unfragmented forest blocks, locations of rare species and natural communities, wetlands, water bodies, open space and recreation areas and conservation land.

a. Rare Species and Natural Communities

Natural area inventories are usually compiled for each state. These inventories identify sites which contain habitat of rare, endangered and threatened natural species. In New Hampshire, this inventory is called the Natural Heritage Inventory and contains data and information on sites in which rare or declining native plants and animals and worthy natural communities of the state are distributed. The Natural Heritage Inventory was used to identify rare species and natural community areas on Map 7. Unfortunately, the natural attractiveness and appeal of these sites has led to their harm and destruction in many areas. As a result, specific site information is not released for public distribution. The locations of these sites are usually characterized by a circular distribution which represents a one-mile-diameter radius that indicates the general location of rare, endangered and important natural habitat. In Candia, four regions have been identified by the Natural Heritage Inventory as containing some important aspects of rare and natural habitat. According to the January 2001 *New Hampshire Natural Heritage Inventory of Rare Plants, Rare Animals, and Exemplary Natural Communities in New Hampshire Towns,* an area known as a Southern New England (SNE) level bog is also located in the Town of Candia.

Natural species that can be found in Town include the Barren Strawberry and Slender Blue Flag plants, the Great Blue heron and Blanding's Turtle.

b. Open Space and Recreation Lands

A "Natural Area" is defined as "…an area of land or water, or land and water, containing, or potentially containing, plant or animal life or geological features worthy of preservation in their natural condition." Some of the natural areas and open space areas identified for recreation in the Town of Candia include Charmingfare Farm, Moore Park, Bear Brook State Park, Winged Spur Ranch, Southern New Hampshire Snow Slickers, the Manchester Waterworks area, Candia Woods Golf Links and Kinnicum Fish & Game Club.

Lands that have been developed or improved for recreational activities such as golf courses, swimming pools, and tennis courts can be considered active recreation sites, while land that is maintained in a natural or near-natural state for recreational or educational purposes would be considered passive recreation areas. Examples of lands having the potential for passive recreation could include river and stream corridors, steep topography or wildlife habitat resources.

c. Forest Blocks (Unfragmented Land Areas)

Maintaining large tracts of unfragmented land is important for the provision of adequate food, cover and water for wildlife. In addition, large intact patches of habitat support a greater diversity of species than small unfragmented patches. Forest land must not be overlooked when prioritizing open space. Forest lands are often relegated to low-density residential development in many land use plans, and it is apparent that there is a need for a greater understanding of the importance of unfragmented forest lands and their role in the areas of timber production, wildlife habitat and water resource protection.

Within the Town of Candia there are several large pieces of unfragmented land that are over 2,000 acres in size, and an even greater number of parcels that are between 500 and 2,000 acres. Keeping these portions of land from being further subdivided and fragmented should be made a priority for the Town. An overlay was created by drawing a 500-foot buffer around Class I-V roads in the eight towns in the Bear Paw region to show the probable extent of development, and to reveal large contiguous undeveloped tracts. The road classes were chosen based on the movement of wildlife. It was felt that, although Class VI roads could be built upon, they were much less likely to impede the passage of wildlife than the other road types. As a result, Class VI roads were not included in this analysis.

Existing developed land in Candia generally parallels the Town road system and has not expanded into the interior natural open space areas. A limited area of broader development is located along Old Candia Road in the south-central section of the Town. The relatively small area of land dedicated to development results in a very large expanse of forest landscape. Forested areas surround the five villages as well as wetlands and ponds in Candia and border the water course network throughout the Town. According to an analysis of property size and use, the largest forested parcels are located in the western portion of the Town where timber management could be most efficiently undertaken.

8. Composite of Sensitive Areas

It is important to assemble open corridors or greenbelts. This information is necessary to find linkages to existing open space or connecting nodes of development, trails and wildlife corridors so they can be protected. Map 8 displays contiguous unfragmented forest blocks, locations of rare species and natural communities, riparian corridors, historical sites, floodplains, wetlands, wetland buffers, aquifers, steep slopes, soils of statewide importance, prime farm soils and the Bear Paw proposed greenway. This map gives an indication as to what and where sensitive features in the Town of Candia "co-occur."

a. Proposed Greenway

The greenway that is present on Map 8 is a part of the larger proposed Bear Paw Regional Greenway system that incorporates the eight communities of Allenstown, Strafford, Epsom, Northwood, Nottingham, Deerfield, Candia and Raymond. Much of the northern portion of the Town of Candia lies within this proposed system.

b. Riparian Corridors

Riparian corridors or streambelt buffers are undisturbed, naturally vegetated areas contiguous with, and parallel to, rivers and streams that attenuate development's impact on water quality and quantity. Riparian corridors protect water resources by filtering pollutants, maintaining water temperature, stabilizing stream banks and channels, supplying woody debris for stream habitat and providing food for aquatic life. To identify riparian corridors on Map 8, a 300-foot buffer was placed around the edge of the water along the shoreline of rivers, lakes and streams. This buffer was based on recommendations outlined in *Identifying and Protecting New Hampshire's Significant Wildlife Habitat: A Guide for Towns and Conservation Groups* (listed in the Bibliography).

When the open space resources are overlaid, a pattern of areas that should be prioritized becomes apparent. In Candia a great deal of undeveloped land would be placed in a low-density development or preservation category. Map 8 indicates that areas where open space resources overlay each other in multiple layers are distributed across the whole community, with a higher concentration in the wet lowland and aquifer sections of the Town. Priority protection efforts should focus on these concentrated open space value areas.

c. Wetland Buffers

A buffer around a wetland can serve many functions, including protecting water quality, protecting wildlife habitat and reducing direct human disturbance from dumped debris or noise. For this project, a buffer of 100 feet was placed around the NWI wetlands. This distance was determined based on the publication *Buffers for Wetlands and Surface Waters: A Guidebook for New Hampshire Municipalities.* This document recommends 100 feet as a reasonable minimum buffer. This determination was made after a thorough review of the research and consultation with natural resource professionals had been completed. A list of recommended minimum buffer widths for wildlife can be found in Appendix H.

9. Ranked Priority Open Space Areas

After reviewing how open space has been ranked and evaluated in various studies, including the Concord, New Hampshire Open Space Plan and the Delaware, New Jersey Open Space Preservation Plan, the members of the Candia Planning Board and Conservation Commission ranked and prioritized open space in their Town based on what they felt were priority areas in terms of environmental and cultural importance (see Appendix G). The end result of this process is a reference map (Map 9) that should be used in conjunction with the other maps referenced in this report to assist in identifying priority open space areas.

Open space areas were placed into three categories: highest, medium and lowest priority. The highest priority category includes steep slopes greater than 15%, wetlands, wetland buffers (100-foot buffer around wetlands), floodplains, aquifers, hydric soils, surface waters, riparian corridors (300-foot buffer around water bodies), forest blocks greater than 1,000 acres, prime/high quality agricultural land, historic properties/sites, greenway, land which provides access or links to a proposed greenway, and wildlife habitat areas. In the medium priority category there is land which provides alternate local connections to the proposed greenway. The lowest priority category contains forest blocks that range from 250 to 500 acres in size.

From the map, it appears that most of the highest priority open space areas can be found in the northern and western portions of the Town. Areas of lower priority are in the southeastern corner. Using this map, the Town can identify areas where open space should be preserved based on priority. This map can be a useful tool in assisting with and facilitating open space conservation and preservation decisions.

B. Conclusions and Open Space Concepts

Based on the Town's natural and cultural resources, an opportunity exists for Candia to remain a visually rural community with village centers surrounded by open space (timber management, agriculture, habitat areas and fields cut annually for hay production and visual appeal).

In order to preserve the rural character and current visual quality of the Town's landscape, a concept plan describing the desired open space pattern would consist of:

1. A community priority to protect the five village centers as clustered buildings with an open space setting or buffer around the structure groups. Preserve the individuality of the villages and their settings; focus on maintaining a recognizable edge between the villages and open lands.

2. Strive to prevent strip development, since this would deteriorate the scenic appeal of Candia's roads and would reduce the quality settings of the village building clusters.

3. Containment of the light industrial area along Old Candia Road in the south-central section of the Town. This area would become the only Town focus of future commercial and light industrial activity.

4. Preservation of the large open space blocks of land that currently contain wetlands, floodplains, steep slopes, woodlands, wildlife habitat, agricultural fields, historic farmsteads and early settlement mill works.

5. Growth would be allowed as uses that blend with the residential, rural character of a country community (some selected uses could be carefully placed to minimize visual and functional conflicts with the character and lifestyle of a small community). Added structures in and near village centers would strengthen the pleasing contrast between open space and building clusters. Spread-out development patterns should be avoided. Contemporary development should be hidden from view in rural areas; fields should be preserved as open land.

III. GOAL, OBJECTIVES AND RECOMMENDATIONS

The following pages list the Town of Candia's Goal, Objectives, and Recommendations. The Town of Candia's Goal is stated in the context of being an ideal solution to all of the Town's open space conservation problems and needs. Although goals are rarely fully attainable, they provide overall direction toward which future efforts are aimed.

Objectives are somewhat more precisely defined statements indicating various courses of action, which are aimed at the achievement of the broader goal. Generally, the objectives are capable of both attainment and measurement.

The recommendations are the specific actions that should be taken if the objectives are to be attained. They identify the types of things that should be done by local officials, boards, Town departments and the voters to help bring about the changes needed in order to produce the desired results. They are subject to change as the Town's circumstances change and as experience is gained with their implementation.

GOAL: **TO PRESERVE CANDIA'S SCENIC BEAUTY, RURAL CHARACTER AND SIGNIFICANT NATURAL AND CULTURAL RESOURCES TODAY AND FOR FUTURE GENERATIONS**

OBJECTIVE #1: **Protect and preserve remaining open space, including agricultural land, forested land, wildlife habitat, and recreational land.**

Recommendations:

- Because much of Candia's existing unprotected open space is currently held in large parcels that could be subdivided and developed at any time (See Appendix A, Map 8), the Town should begin working with its large landowners to identify alternatives to development now, before the landowners decide to sell.

Protecting working farms and forests requires more than just buying land or its development rights; it requires making agriculture and forestry economically viable industries. To some extent, the economics of farming and forestry are dictated by national or even international trends of supply and demand. However, Candia has the advantage of being located near numerous population centers that demand farm and forest products. Strategies for promoting these industries should capitalize upon this locational advantage.

Farm Lands

- Farmers may be able to increase profits by shifting to high-margin niche crops demanded by urban markets, such as organic and hydroponics produce as well as specialty foods such as gourmet mushrooms.

- Local groups of farmers and others interested in agricultural preservation can form organizations to share resources, services, and advice, and to market local crops to larger buyers such as local restaurants, institutions, and independent supermarkets.

- Agri-tourism may be a source of significant income for farmers growing "U-Pick" crops such as apples and pumpkins, and should be promoted.

- Community Supported Agriculture (CSA) programs allow persons to buy a share in a farm for a moderate fee, which guarantees them a certain portion of the farm's output during the duration of the growing season. Farmers benefit from this program since they receive money up-front which covers the cost of seeds, planting, equipment, and the farmer's salary, while residents benefit by receiving high-quality produce (often organic) at a moderate price. Moreover, the shareholders, rather than just the farmer, absorb the risk of crop failure. This enables farmers to stay in business despite natural disasters and blight. CSA's may be quite successful if nearby urban centers are targeted.

Forest Lands

- Conduct a Forestland Evaluation and Site Assessment (FLESA) study to establish a community management program for the wooded lands in Candia. Contact the Southern New Hampshire Resource Conservation and Development Council or the UNH Cooperative Extension Service for assistance in undertaking this process. The coordination of this study and the implementation of its recommendations are generally the responsibility of the Conservation Commission.

Unique Habitat Areas

- Use acquisition methods to protect these very special wildlife areas.

- Work with landowners to establish easements and deed restrictions, which protect habitat areas.

Recreation Lands

- Prepare a Candia Recreation Master Plan to identify outdoor recreation needs and to set priorities for land acquisition associated with recreational activity needs.

OBJECTIVE #2: Protect and manage for sustainability the Town's natural resources including ponds, streams, aquifer reservoirs, timber growth and mineral deposits in order to preserve biological diversity.

Recommendations:

- The Town of Candia is in the process of updating its municipal Master Plan. It should present a clear vision for the future, limit growth to priority development areas, and minimize the impact of residential development to preserve the rural character of the landscape. Priority Development Areas should be those that show suitability for supporting residential development based on an analysis of slope, soil characteristics, habitat suitability, septic system limitations, risk to water supplies, and proximity to existing infrastructure and residential development (See Appendix A, Map 8).

- The Town of Candia should make a determination of its prime wetlands.

- A review should be conducted of the Town of Candia Recycling Center to determine its impact on the adjacent environment, including the river, wetlands, and underlying aquifer. Recommendations should be obtained for any remedial/restorative measures needed to ensure its safe operation and the protection of the immediate environment.

- Open Space Plan implementation should be placed as a permanent agenda item for Candia Conservation Commission meetings. The Conservation Commission could have a standing subcommittee that would report every six (6) months on plan implementation progress and recommend steps to be taken. The Conservation Commission should also prepare a budget for the expenditure of Change in Use penalty funds.

- The subcommittee (as described above) should determine priorities concerning land protection. Priorities could be determined as follows:

  <u>High Priority</u>:

  Open space that may be lost quickly or that is highly important to meet the goal/objectives, including high quality agricultural land, aquifer soils, steep slopes and key parcels adjacent to historic and cultural resources.

  Recreational resource lands that may be close to villages and prime areas for near future development.

  Wetlands and floodways that the community does not feel are adequately protected through regulations (federal, state, and local), and might be beneficial for educational and recreational access.

  <u>Moderate Priority:</u>

  Open space that is protected by current use and that is not at a critical location in the community, including broad forested lands without efficient access and not mapped as key aquifers or habitat.

OBJECTIVE #3: Increase the public's awareness of their role in protecting natural resources.

Recommendations:

- Encourage farmers, foresters and golf course owners to apply Best Management Practices near water bodies. Examples of Best Management Practices include spreading manure during appropriate times of the year, using Integrated Pest Management techniques, and avoiding machinery that excessively compacts soils and thereby increases runoff into surface waters. The Health Inspector, Selectmen, or Conservation Commission could send out brochures and organize a workshop that describes what Best Management Practices are and why they should be used.

- Educate large landowners, including farmers (See Appendix F), about various land protection options, as well as the financial and personal benefits that can be enjoyed from such protection. Conservation agencies that have knowledgeable staff available to educate the public about these issues can be featured in a seminar. Distribution of informational brochures is an appropriate first step.

- Educate residents about plants that are most invasive and encourage the use of native shrubs and flowers in gardens. Although exotic plants, like purple loosestrife, look beautiful, they can wreak havoc on the native environment since they have no native predators. Once these invasive plants become firmly entrenched in a wetland, meadow or forest, they can be very expensive and difficult to eradicate. Joan Iverson Nassauer, Brady Halverson and Steve Ross wrote an excellent guide entitled *Bringing Garden Amenities into Your Neighborhood: Infrastructure for Ecological Quality* that illustrates how typical neighborhood gardens can use native plants to enhance the beauty of the area and manage stormwater. A great source of information about invasive plants is the New England Wild Flower Society.

- The Town could convert trails to self-learning nature trails that display informative signs about the natural history, plants and animals native to the area (See Appendix A, Map 6).

OBJECTIVE #4. Protect environmentally sensitive areas in the Town, including watersheds, aquifers, floodplains, wetlands and steep slopes.

Recommendations:

- In the future, Candia is likely to see more and more multi-lot subdivisions as growth in Southern New Hampshire moves north of Manchester. The Town should institute local land use regulations to address open space preservation as development occurs. Furthermore, open space development zoning is perhaps the best low-cost tool for protecting open space in the face of development, and is compatible with the Town's

rural character. The Town should consider adopting an effective open space development-zoning bylaw now, so that new subdivisions are designed to protect open space. The Southern New Hampshire Planning Commission has just recently completed a handbook, *Open Space Development through Residential Clustering*, that contains a sample open space zoning ordinance. The handbook has been forwarded to the Town of Candia. Another option for consideration would be performance-based zoning.

- Identify and map aquifer recharge areas. This is a crucial first step in the protection process. The Town should determine the location and extent of the aquifers and aquifer recharge areas within its boundaries.

- Draft a plan that assesses the sources of non-point source pollution such as gravel pits, road salt, landfills and septic systems, and makes recommendations regarding land uses that harm water quality. It would be ideal to work with neighboring communities and base this plan upon watershed boundaries.

- The Town should encourage and promote the re-establishment of forest cover along streams and rivers as a means of reducing erosion, filtering polluted runoff, absorbing floodwaters and slowing water velocity. Native woody vegetation should be planted, especially in areas adjacent to farms, logging operations and urban development.

- The Town should work to ensure that the most vulnerable and insufficiently protected lands are protected through conservation restrictions and managed appropriately. Access should be restricted in the most sensitive areas. Municipal lands should be assessed for properties that are biologically significant.

OBJECTIVE #5: Preserve scenic areas, wildlife habitat and recreation corridors.

Recommendations:

- Inventory wildlife populations and habitat in the community. This is a fun way to get students and citizens involved and interested in the environment as well as to gather information important for conservation planning and regulatory purposes. Biology students from local schools and high school science classes can be recruited to help conservation groups collect data (See Appendix A, Map 7).

- Prevent the isolation of forested patches by promoting local connectivity. This can be accomplished by acquiring conservation restrictions on properties that link existing protected parcels.

- There are a number of ecological and social reasons for establishing greenways that include protecting wildlife habitat, natural communities, watersheds and water resources. The Town of Candia should continue to promote the efforts of the Bear Paw Regional Greenways Project to connect area state parks and other conservation lands. Its Board of Directors represents Candia, Deerfield, Epsom, Northwood, Nottingham, Raymond, and

Strafford. Included among its goals are landowner outreach, locating funding sources for land conservation, estate planning and land protection workshops, forest management tours, and guided walks on conservation lands (See Appendix C, Bear Paw Informational Pamphlet).

OBJECTIVE #6: Preserve the open space settings for Candia's historic and archeological resources.

Recommendations:

- The Town should work to establish historic districts in appropriate areas.
- A visual analysis of historic sites and villages should be conducted in order to protect land that could have a negative visual effect if developed.

OBJECTIVE #7: Expand the Town's access to outdoor resources such as ponds, woods, and scenic places.

Recommendations:

- Efforts should be made to purchase critical properties that enable public access.
- The Town should strive to reach recreational access agreements with landowners.

OBJECTIVE #8: Maintain and improve existing recreation facilities.

Recommendations:

- Establish a Recreation Commission for the Town of Candia.
- Investigate Town-owned parcels to determine their suitability for supporting active and passive recreation. The Town may have additional land that is appropriate for hiking trails.
- Construct porous parking facilities adjacent to trails and recreation sites, develop trail maps and place information kiosks at trailheads as ways of encouraging people to use and enjoy conservation lands. If people are allowed to access these areas, they will be more likely to appreciate them and support the preservation of additional land.
- Develop a management plan for all municipally owned recreation areas and facilities. This will help ensure that these areas are maintained properly.
- Make municipal recreation areas and facilities handicapped accessible.

- Police and maintain recreation areas. Unless recreation areas are safe and clean, they may not be of much use to a large segment of the population. Efforts should be made to keep these areas in top condition.

- Increase public awareness of recreation areas, facilities and programs through advertisements (local newspapers, newsletters, cable TV) and the development of a brochure. Part of the reason why residents voice an interest in more recreation areas is that they may be unaware of existing opportunities. Through advertising, local residents will be aware of the wealth of opportunities that currently exist.

- Develop a Town Recreation Master Plan that is coordinated with this Open Space Plan and ensure that all elements are included in the Town's complete Master Plan.

OBJECTIVE #9: Encourage the cooperation and coordination of groups having interests and concerns associated with outdoor recreation.

Recommendations:

- The Town should encourage sportsman's clubs and other private recreational organizations to place conservation restrictions on their properties so that these lands can be retained in their current use in perpetuity. The Conservation Commission could perhaps coordinate this activity.

- The Town should continue to recruit volunteers, such as the Boy Scouts, to clear and maintain existing trails on an annual basis, preferably in the spring. These volunteers also enhance the trail network by constructing new trails and extending existing ones.

- Encourage elementary and middle schools and the regional high school to incorporate an adopt-a-pond or -stream program as part of the science curriculum. This would broaden public awareness of water quality issues.

- Because there are advantages to working with land trusts, the Town should partner with Bear-Paw Regional Greenways to help conserve land.

OBJECTIVE #10: Acquire, develop and maintain additional land for the open space and active recreational needs of Candia's population.

Recommendations:

- To fulfill its Open Space Plan goal and objectives, the Town could employ potential implementation methods (See Appendix D) and should submit proposals for grants through state and federal grant programs (See Appendix E).

- The Town should review municipal land holdings and place conservation restrictions on those properties that are of scenic, historic, cultural, ecological, or recreational significance and that are seen as a priority. This will ensure that these properties are protected in perpetuity.

- A Capital Improvement Program should include provisions for the acquisition of priority open land and important natural resources. The penalty payments for taking land out of current use should be used to help fund this activity.

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